

USS Onboarding

Low Altitude Authorization and Notification Capability (LAANC)



February 2018

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FAA UAS LOW ALTITUDE NOTIFICATION AND AUTHORIZATION CAPABILITY (LAANC) ONBOARDING

1. Background

The FAA is in the process of determining its approach and business plan to integrate Unmanned Aircraft Systems (UAS) into the National Airspace System (NAS). As part of that approach, the FAA is dedicated to ensuring that UAS are able to operate safely in the same airspace with manned aircraft.

The FAA challenge is to foster equitable access for all users and providers while ensuring critical air traffic control (ATC) technical and safety requirements are met for operations in the NAS. In addition, FAA seeks to foster a competitive environment for providers of UAS and related services. As the FAA and industry move toward integration of all types of UAS into the NAS, two rules have been introduced governing the requirements for small UAS (sUAS), defined as UAS that weigh less than 55 pounds.

In 2016, the Federal Aviation Administration (FAA) enacted 14 C.F.R. Part 107 governing sUAS flight activities in the NAS. The rules address the requirements for operators of sUAS. Under Part 107, operators are required to receive authorization to fly in certain classes of airspace.

In addition, in 2012, Congress enacted the Special Rule for Model Aircraft, Section 336 of the FAA Modernization and Reform Act (P.L. 112-95), which the FAA subsequently codified under 14 C.F.R. Part 101. The Special Rule for Model Aircraft requires operators flying under the rule to notify both the airport operator and air traffic control tower (when one is located at the airport) if they intend to fly within five (5) miles of an airport.

As of early February 2018, over 1,000,000 sUAS have been registered with the FAA. Over 30,000 airspace authorizations have been processed and over 7,000 requests currently await approval. The target timeframe for the manual FAA process of addressing authorization requests is 90 days. With the fast pace of sUAS operators entering the market, automation is critical to support the growing demands for safe and efficient NAS operations.

LAANC was developed to provide Part 107 and Section 336/Part 101 sUAS operators an automated, streamlined, and efficient solution to either receive airspace authorization or provide notification to Air Traffic Control (ATC). LAANC provides near-real-time

processing of airspace authorizations including automatic approval of requests that are below approved altitudes in controlled airspace. This new capability uses a data exchange framework with UAS Service Suppliers (USS) to provide quick access to UAS operators. This ease of access is expected to increase and encourage rule compliance. From an ATC perspective, the development of sUAS LAANC enables safe and efficient flight services of sUAS in the NAS.

Industry has shown an interest in and ability to provide sUAS services like LAANC. The FAA has worked with industry to create data-exchange solutions that automate and innovate to provide access to the NAS. Through the LAANC initiative, the FAA provides the USS data in the form of UAS facility maps (UASFMs) that include information on altitudes and distances around airports that would not require coordination with the ATC facility in order to receive airspace authorization, as well as updated airspace restriction information including Notices to Airmen (NOTAMs), Temporary Flight Restrictions (TFRs) and Special Security Instructions (SSIs) issued under 14 C.F.R. § 99.7. Using this data, USS can provide Part 107 operators the ability to interact with the maps and submit authorization requests to the FAA and provide Section 336/Part 101 operators the ability to notify ATC of their intent to fly. Additionally, data received by FAA from the USS will include information about an operator's planned flight. This will allow ATC to contact the operator in the event of an airspace emergency.

2. Objectives of the onboarding application process

The objectives for this process include:

1. Provide required onboarding information and documentation to potential USSs
2. Outline the LAANC USS onboarding process and requirements
3. Provide a mechanism for potential USSs to communicate their approach to meeting the USS onboarding rules

3. Strategy Overview

The application process is intended to initiate onboarding activities between FAA and potential USSs. This section provides an overview of the activities required to complete the USS LAANC onboarding process. The FAA plans to host two USS application periods a year, each consisting of four (4) steps and ranging approximately five (5) months to completion (See Figure 1 below).

If at any decision point a potential USS is deemed immature, they will be encouraged to continue developing their solution and reapply during the next application period.

Figure 1. Onboarding Process Timeline

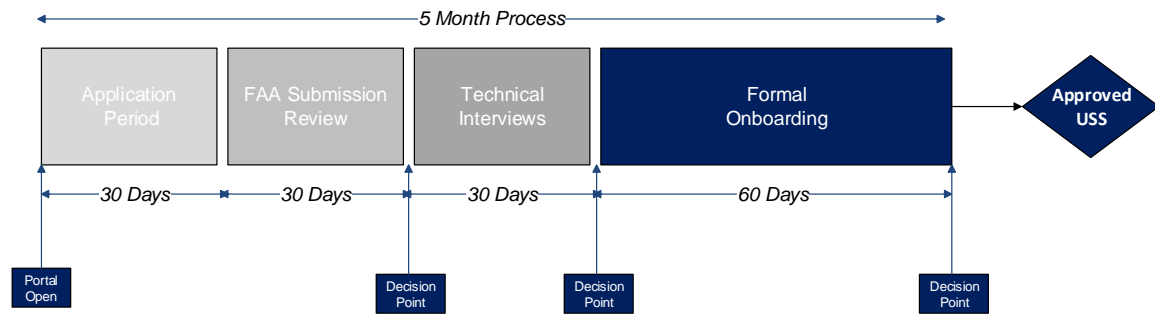


Figure 1. Onboarding Process Timeline

3.1. Application Period

Respondents must read the following documents prior to application:

- LAANC Concept of Operations
- USS Operating Rules
- Memorandum of Agreement (MOA)
- USS Onboarding Demonstration and Test Plan

A complete USS onboarding application submission must include:

- Completed USS Onboarding
- Signed MOA
- Any additional information about their product or service (constraints provided in the specific instructions section outlined below)

3.2. FAA Submission Review

After reviewing the submitted documentation, the FAA may ask for additional information based upon the written material submitted, or may choose not to seek further clarification.

The FAA will render a decision within 30 days of the close of the application period.

3.3. Technical Interview

If the FAA decides to proceed with the application, the respondent will perform a Technical Interview. The FAA will provide the respondent with a set of test windows to demonstrate that its product meets the USS Operating Rules.

3.4. Formal Onboarding

Onboarding will be based on the current set of USS Operating Rules document, which is subject to change.

Applicants who successfully complete the Application process and the Technical Interview may then proceed to system integration with the LAANC Automation Platform (LAANC AP) in a staging environment. In order to gain access, the applicant must provide the FAA with the IP address or CIDR block of the system(s) that will originate connections to the FAA. (Acceptable blocks are /8, /16, /24, and /32 IPv4 address ranges and /16, /24, /32, /56, /64, and /128 IPv6 address ranges.) The FAA will provide the applicant with a unique three-letter identifier, API documentation, and authentication details. The applicant must be prepared to implement security measures for all connections to LAANC-AP by employing Secure Sockets Layer (SSL) and OAuth 2.0.

Initial connectivity to the LAANC-AP staging environment may be verified using an API test client. The use of an established tool will allow the applicant and FAA to validate network connectivity and test that the authentication token is working correctly independent of the applicant-developed software. The FAA will provide sample scripts that will assist in setting up the initial tests, and demonstrate proper invocation of the LAANC-AP API. In the process of reviewing the documentation and establishing connectivity, the applicant will have two choices in the approach to receiving messages initiated by the LAANC-AP – polling or webhook notification. If the applicant chooses to implement webhooks, a callback URL must be provided to the FAA. The requirements for the webhook receiver are contained in the API documentation.

Once initial network connectivity and authentication is complete, the applicant may proceed to integrate fully with the staging environment. The applicant must demonstrate successful execution of validation scenarios to show compliance with the USS Operating Rules. The FAA will allow all applicants two attempts to pass the compliance demonstrations/tests. If an applicant fails both attempts, the applicant may resubmit a package at a later date without penalty.

Upon successful completion of all onboarding activities, the FAA will sign the MOA and the USS will receive notification that it may begin providing services. Specific directions regarding locations, dates, and services may be provided will be communicated by the FAA to the USS at the time of approval. Configuration of the production environment will occur to allow the application to connect including the whitelisting of applicant server(s), webhook URL (if applicable), and production authentication credentials.

The FAA reserves the right to decide, at any point in the process, that the applicant is not yet capable of onboarding. If the FAA makes this determination, no penalties will be assessed to the respondent and the respondent may re-engage in the process during any future open application period.

The FAA's decision on the ability of a respondent to onboard is final. Reasons the FAA may decide a respondent is not capable of onboarding include but are not limited to:

- A respondent does not have a working product as demonstrated and described in the initial package;
- A respondent does not have a mature product that meets the USS Operating rules; or
- A respondent does not pass the security interface tests that provide protections for the FAA, the USS and Operators.

4. Onboarding Package General Background

Interested parties are advised that:

- 4.1. This is not a Screening Information Request (SIR) or Request for Proposals (RFP).
- 4.2. The FAA does not intend to release a SIR or RFP for LAANC services.
- 4.3. The FAA is not seeking or accepting unsolicited proposals outside of this application process.
- 4.4. The FAA will not pay for any information received or costs incurred at any point in the onboarding process.
- 4.5. Any costs associated with responding to this onboarding package are incurred solely at the interested party's expense.
- 4.6. Any costs associated with providing any services based on LAANC connectivity are incurred solely at the interested party's expense.
- 4.7. FAA, at its sole discretion, may contact one, some, all, or none of the respondents and ask for additional information.
- 4.8. This onboarding package is intended to allow an interested party to exchange data with the FAA. Vendor participation in any informational session is not a promise for future collaboration with the FAA.
- 4.9. FAA decisions regarding the onboarding of a potential USS are in no way prejudiced by FAA decisions regarding other USSs.
- 4.10. FAA decisions regarding the onboarding of a potential USS are not subject to protest.

5. Specific Instructions

- 5.1. The applicant must complete an onboarding application package consisting of a written package and a signed MOA.
- 5.2. Application packages must be sent by email to 9-AJM-USS-Applications@faa.gov when the Application Period is open.

- 5.3. The written response must address each operating rule in the USS Operating Rules.
 - 5.3.1. The written response must not exceed a total of twenty 8½" x 11" pages. Text in the response must be 12-point or larger Times New Roman font. Tables may be provided as well; text in tables must be 10-point or larger Times New Roman font. The written response must be provided in machine-searchable .pdf, .doc, or .docx format.
 - 5.3.2. The applicant must address its approach to meet each operating rule outlined in the most recent version of the USS Operating Rules by addressing each operating rule with as much descriptive detail as possible. In the section addressing each operating rule or set of operating rules, the applicant must reference the relevant operating rule or set of operating rules by number.
 - 5.3.3. A complete onboarding application package must demonstrate rather than simply state capability. For example, the response must go beyond the statement that "XYZ company can provide O&M support."
 - 5.3.4. The applicant must state its intention and its approach to meet each operating rule within a 90-day period from submitting its application. If the applicant cannot or will not meet the requirements of an individual operating rule, it must say so and explain why not. The FAA may, at its sole discretion, reject an application for failure to meet any operating rule.
- 5.4. The applicant may provide additional information to support its application. Additional supporting information may be no more than five pages and is subject to the page-size, font-size, and format restrictions in section 5.3.1. Any embedded video material may not exceed 2 minutes in length.
- 5.5. The applicant must provide a "USS-FAA Memorandum of Agreement (MOA)" with the application, electronically signed by an individual with the authority to bind the applicant. The terms of the MOA are identical for all USSs and are non-negotiable.
- 5.6. The FAA will review all application packages received to determine which applicants may be invited to participate in onboarding activities.
- 5.7. The selection of applicants invited to participate in the onboarding activities will be at the sole discretion of the FAA and will be based on a combination of factors including, but not limited to, the following:
 - 5.7.1. The number and nature of applications received,
 - 5.7.2. The ability of an applicant to meet the USS Operating Rules, and
 - 5.7.3. The direct relevance of a given applicant's qualifications and experience.
- 5.8. Any decision rendered by the FAA will be provided to applicants with an explanation of the decision.
 - 5.8.1. A decision by the FAA to discontinue the onboarding process at any time will not impact an applicant's ability to resubmit a package at a later date without penalty

6. Scope

The scope of the LAANC product and the data exchange that enables authorization and notification is contained in the documents posted on the onboarding web portal at https://www.faa.gov/uas/programs_partnerships/uas_data_exchange/.